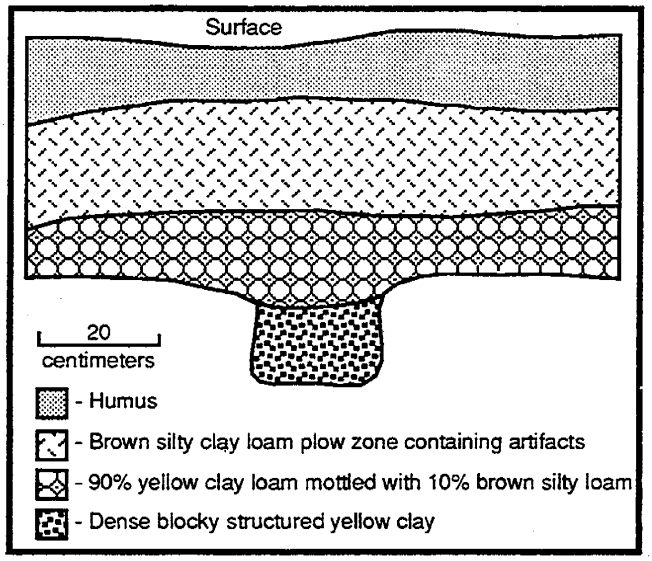
FIGURE 33

Mermaid Wheelwright Shop Site, Profile of Test Unit 6, North Wall, Phase I Testing



MERMAID WHEELWRIGHT SHOP (7NC-D-106C)

RESULTS OF FIELD INVESTIGATIONS

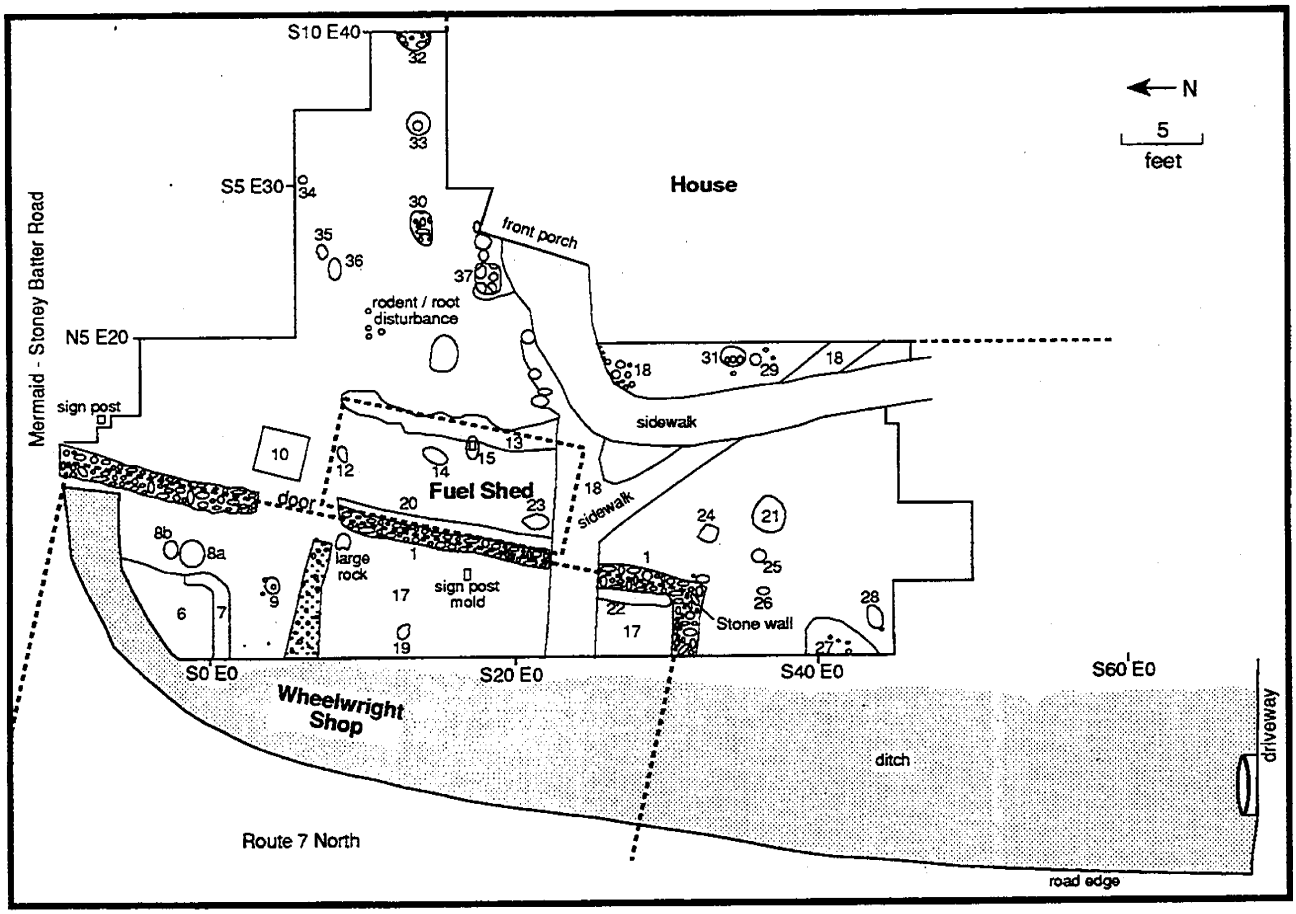
Testing for the Phase I survey of the Mermaid Wheelwright Shop site (7NC-D-106C) recovered historic artifacts dating to the second half of the nineteenth century, but encountered no features (Catts et al. 1986:72-76). Two 1x1 meter test units were excavated in the front yard of the 2-story frame Walker House (Test Units 5 and 6). Historic artifacts were found in a brown silt loam A horizon buried beneath a 10cm humus level (Figure 33).

The Phase II investigations consisted of the excavation of 55 5' x 5' contiguous units into the humus level at the site, and utilized the same field methods that were in effect at the Blacksmith Shop excavations. A datum point was established at S0E0 and all units were excavated using a southwest grid coordinate. Soils were screened through 1/4-inch wire mesh, and profiles and plan views were prepared. Black and white, color photographs, and video images were taken of units and of the general excavation. Based on the successful results of the excavations at the Mermaid Blacksmith Shop (7NC-D-106B) across the road from the Wheelwright Shop, it was anticipated that much of the wheelwright shop would still be intact beneath the landscaped yard of the Walker House. The excavation of the plow zone (or more correctly, topsoil) level at the wheelwright shop removed a light brown silt loam soil that varied in depth from .6' to 1.1' across the site. Beneath this level thirty-eight features were discovered and excavated.

The archaeological investigations at the Mermaid Wheelwright Shop (7NC-D-106C) uncovered evidence of the remains of the shop itself, as well as an addition off the east side of the shop, porch supports and walkways related to the Walker House (constructed in 1900 after the shop was demolished or razed), and several features that could not be attributed clearly to either of these occupations (Figure

FIGURE 34

Phase II Testing at Mermaid Wheelwright Shop



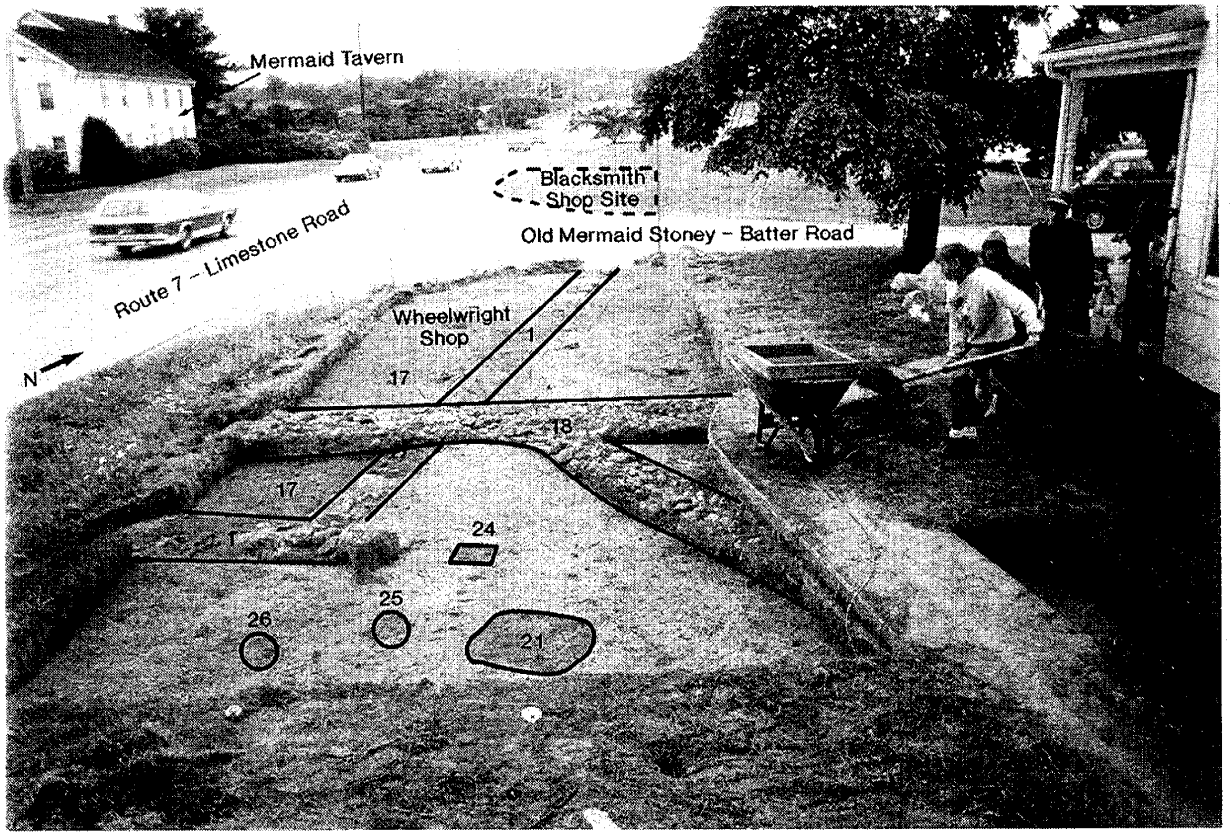
34; Plate 36). The shop itself had been heavily disturbed by demolition in 1900, and by highway construction in 1964. Only a portion of the stone foundation walls were intact, and very little of the interior of the shop. Two modern features were also encountered; Feature 10 was the location of Test Unit 6, one of the 1x1 meter Phase I excavations at the site (Catts et al. 1986:75), and Feature 15 was a post hole associated with a modern commercial sign for the present property owner, Bellini's Nursery.

Wheelwright Shop Features

Nine features were excavated that can reasonably be interpreted as associated with the wheelwright shop. Table 18 summarizes these features. Feature 1 was the remains of the southern and eastern rubble stone foundation walls for the shop (Plate 37). The foundation wall trench was completely excavated, and contained nails, glass fragments, metal parts, and bone. The wall was approximately 1.2' wide, and the archaeological evidence suggests that the building was at least 42' long. The northern portion of the wall, extending from S3E10 to the edge of Old Mermaid-Stoney

PLATE 36

View Looking North of the Mermaid Wheelwright Shop Site, Excavations in Progress



Batter Road, was more intact after the plow zone excavations than the southern and eastern sections of the wall. However, the eastern and southern wall sections were emplaced more deeply into subsoil (about 2.0' deep), than the northern section. A shallow mortar and rubble stain extended west from the foundation at S8E8, suggesting some sort of interior partition within the shop. The gap between S8E8 and S3E10, approximately 5' wide, indicates that a door or passage was located at that point in the rear (eastern) wall of the shop.

In the southern portion of the shop, between the south rubble stone wall (Feature 1) and the mortar and rubble stain, Feature 17 was excavated and is interpreted as the remains of the wheelwright shop floor. The feature consisted of a dark gravelly silt loam with pockets of mortar intermixed. The depth of the feature varied throughout the shop, ranging from .2' to .4' deep. Artifacts contained in the fill included iron fragments, whiteware, Bennington stoneware, yellowware, redware, brick sherds,

TABLE 18

Summary of Wheelwright Shop Features

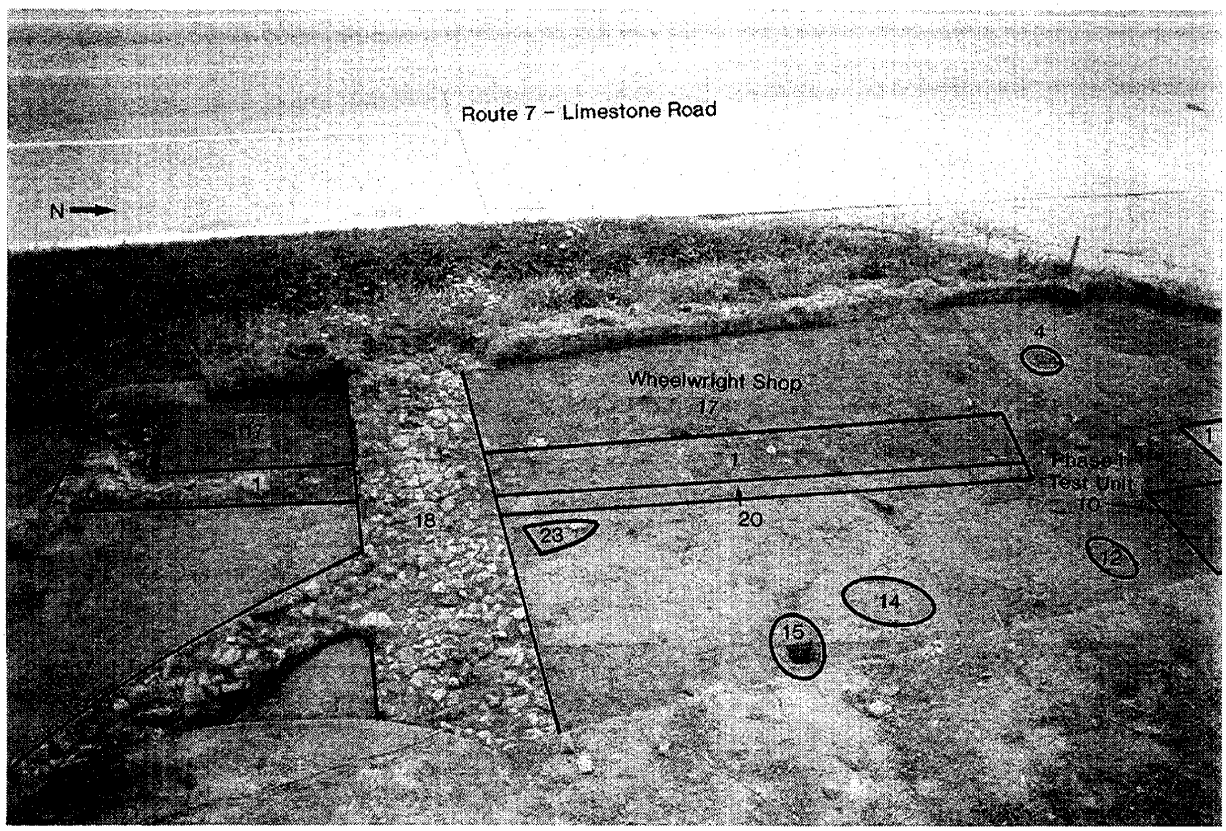
Feature Number	Unit	Dimensions	Description
1	S10 E0	42.5' long 1.2' side 1.2' deep	Stone foundation wall; depth varies. Mortared. Back and side walls of the wheelwright shop. Truncated by 1960's road construction. Contained nails, window glass, bone, and metal fragments.
6	S0 E0	5.0' long 5.0' wide .8' deep	Large "corner" stain of dark silt loam. Truncated by 1960's road construction. Feature 6 superimposed on Feature 7. Could be remnant of buried 'A' horizon.
7	S5 E0	'L' shaped 5.0' long 1.0' wide 1.9' deep	Dark silt loam with mica spread throughout. Associated with Feature 6, very deep, contained nails, iron fragments, and glass. Could be remains of a feature disturbed by 1960's road construction; drainage ditch?
8a	S0 E5	1.5' diameter .8' deep	Post hole and post mold. Feature filled with support stones, and mold barely visible. One nail recovered.
8b	S0 E5	.8' diameter .4' deep	Post hole. Very shallow; no artifacts present.
9	S5 E0	1.0' diameter 1.6' deep	Post hole. Dark brown silt loam soil stain. No artifacts recovered.
17	S10 E0, S15 E0, S20 E0, S25 E0, S30 E0	28' long 4.0' - 8.0' wide .2' - .4' deep	Dark gravelly silt loam with mortar inclusions. Floor of the wheelwright shop. Artifacts included iron, whiteware, bone, brick, glass, redware, a pin, and yellowware.
19	S15 E0	1.0' long 1.3' wide' .1' deep	Very shallow possible post mold. No artifacts recovered. Located inside of shop area.
22	S30 E0	5.0' long 1.2' wide .5' deep	Long linear soil stain located on inside of shop wall (Feature 1). Apparently truncated by stone walkway (Feature 18). Contained nails, metal, and window glass.

glass (window, table, household, and bottle), and bone.

Feature 19, located at S15E0, was a very shallow (only .1' deep) possible support post. No artifacts were recovered from the feature. Measuring 1' x 1.3', the feature may have been a post support inside of the shop. Feature 22 was located along the western wall of Feature 1, from S25.5N4 (where Feature 18 a walkway to the 1900 house; see below) to S30.5E4. The feature was about 5.0' long, 1.2' wide at its widest point, and about .5' deep. Feature 22 was probably an interior sill or builders trench for the shop foundation. Unfortunately the artifacts contained in the feature consisted of a few fragments of window glass, some metal sherds, and a couple of cut nails. Thus, a clear date of construction was not readily apparent from the feature fill.

PLATE 37

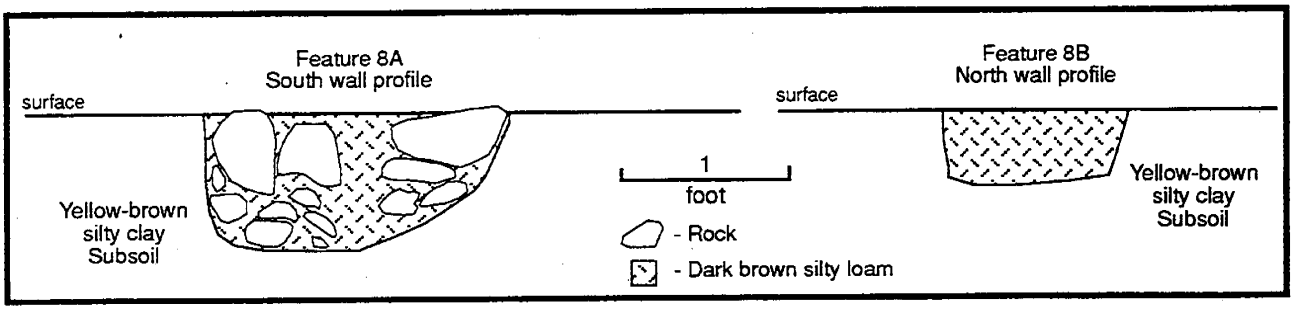
View Looking West of the Remains of the Wheelwright Shop



At the northern end of the shop, north of the shallow mortar and rubble stone stain, several features probably associated with the wheelwright shop were discovered. Features 6 and 7, located in the extreme northwest corner of the excavation area, seem to have been associated together. Feature 6 consisted of a squarish, 5' x 5' dark silt loam soil approximately .8' deep that contained several fragments of Bennington and American blue and gray stoneware in the fill. It was superimposed on Feature 7, a L-shaped, 1.0' wide and 5.0' long trench about 1.9' deep consisting of a dark brown silt loam with mica flecks spread throughout. Nails, glass, and metal fragments were recovered from Feature 7. The precise uses of these features is difficult to determine. Both were truncated by the 1964 road construction. Their association with the wheelwright shop is suggested by their location within the limits of the shop, and by the small amount of artifacts recovered from their fills. It is possible that

FIGURE 35

Profiles of Feature 8A and 8B



Feature 7 was some type of drainage system for Feature 6, but the nature of Feature 6's function is not known.

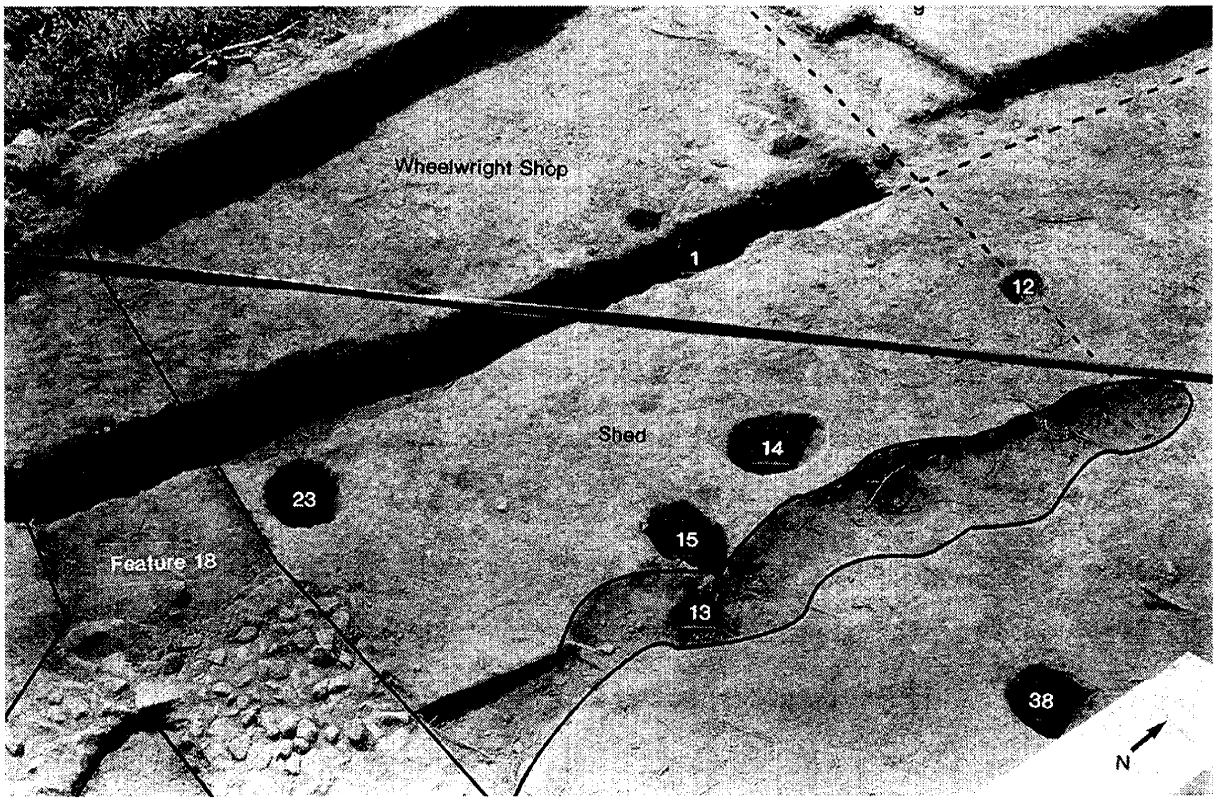
Several clear post holes and post molds were also located in the northern end of the shop. Features 8a and 8b were originally seen at the surface of the subsoil as one feature, but upon excavation they were found to be separate features (Figure 35). Feature 8a was a 1.5' diameter post hole and barely visible post mold that extended about .8' deep into subsoil. The post mold was suggested by the presence of support stones in a roughly circular pattern. One nail was recovered from the feature. Feature 8b was a smaller (.8' diameter) post hole that was also very shallow (.4' deep). No artifacts were recovered. Feature 9, a dark brown silt loam post hole, was 1.0' in diameter, 1.6' deep and also contained no artifacts.

Eastern Shed Addition Features

Archaeological evidence suggests that there was a frame shed addition, constructed on ground-laid wooden sills, located to the immediate east of the rear foundation wall of the wheelwright shop (Plate 38). Five features found at the site indicate the presence of this shed (Table 19). The sills are represented by Features 13 and 20 (Figure 36). Both of these features are about 14.5' in length. Feature 13 is 1.2' wide and 1' deep, while Feature 20 is slightly narrower (1.0') and shallower (.8'). These features run roughly parallel to each other about 7' apart, and Feature 20 is in direct association with the rear shop wall (Feature 1). The construction of Feature 18 (the cobble walkway) disturbed and truncated these sills on the southern end of the shed, but rough dimensions for the shed are approximately 15' x 7'. Feature 13 contained Bennington stoneware sherds, plain, molded, and blue transfer-printed whiteware fragments, nails, window and bottle glass, bone, tobacco pipe fragments, and

PLATE 38

Eastern Shed Addition Features, After Excavation



metal fragments. Interestingly Feature 20 contained no artifacts.

Three post holes were located within the limits of this shed: Features 12, 14, and 23. Feature 12 at S9E12 was a very shallow post hole located midway between the sill features (13 and 20). Feature 14 was a post hole located close to the west side of Feature 13 at S15E12, and was roughly oval (1.8'x1.0') and about 1.3' deep. Feature 23 was a post mold approximately 1.8' in diameter and 1.6' deep located at S22E8 - deeper than the other posts in the shed. Its location off-center and close to the rear shop foundation wall suggests that it may have served as a door jam or post for an entrance into the shed (if there was one on this side of the shed).

Walker House Porch Features

At least seven of the identified features can be attributed to the house constructed by James H. Walker in 1900. Table 20 summarizes these features. Six of the house features (Features 29, 30, 31,

TABLE 19

Summary of Eastern Shed Addition Features

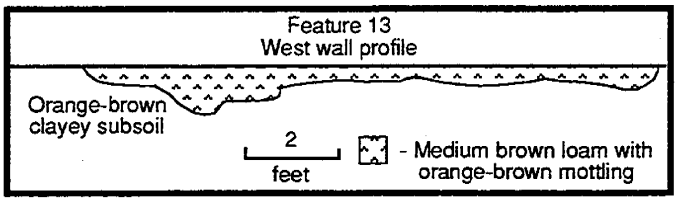
Feature Number	Unit	Dimensions	Description
12	S9 E12	.8' diameter .5' deep	Circular, medium brown silt loam stain. Very shallow. Contained glass and metal fragments. Basin-shaped post hole.
13	S20 E10	10' feet long 1.2' wide 1.0' deep	Long, linear soil stain, medium brown silt loam. Contained whiteware, nails, window glass, bottle glass, bone, pipe fragments, and metal. Irregular profile; could be sill line for shed addition off rear wall of Wheelwright shop.
14	S15 E12	1.8' long 1.0' wide 1.3' deep	Post hole associated with Feature 13.
20	S10 E5 S15 E5	14' long 1.0' wide .8' deep	Orange silt loam linear stain running along the eastern edge of Feature 1, probably a sill line associated with Feature 13. Or could be a builder's trench. No artifacts recovered.
23	S22 E8	1.6' diameter 1.8' deep	Post mold.

32, 33, and 37) represent the remains of brick or wood supports for an earlier porch on the house. Features 30, 31, 32, and 37, while varying in dimension and depth were all the remnants of brick and stone pier supports, and glass, whiteware, and porcelain insulator fragments were recovered from them (Figures 37). Features 29 and 33 were the remains of wooden posts that may have been related to the porch (Figure 37). Both were about the same depth and dimension. Feature 29 may have been a corner post for the earlier porch, and Feature 33 appears to have been a support post located midway between Features 30 and 32.

The other feature associated with James Walker's house was Feature 18, the cobble and mortar walkway (Plate 36). Feature 18 extended from S22E0 eastwards to the edge of the present concrete walk at S22E20. This section of the walk was approximately 3.0' wide. At about S25E10 the walkway forked and a narrow 1.5' wide section extended northeastward to S42E20. The mortar in the walkway contained a large amount of oyster shell. Few artifacts were recovered from within the cobble walk, such as one fragment of whiteware, several cut and wire nails, some bottle glass, several metal fragments, and some coal and brick.

FIGURE 36

Profile of West Wall of Feature 13



Feature 18 clearly antedates the construction of the wheelwright shop because it cuts through the rear shop wall and the sills of the shed addition. The walkway obviously predates the modern concrete walkway which is located at ground surface and is still in use. The porch supports can not be dated any more accurately than the walkway. However, the ownership and occupants of the Walker house changed in 1934 and again in 1955, providing two possible dates for the exterior porch and walkway alterations.

Other Features

The ten remaining features at the site are difficult to ascribe to either the Walker House or the wheelwright shop, due to the effects of road construction, house construction, and the small area undisturbed by these events. Most of these features (24, 25, 26, 28, 34, 35, and 36) appear to be the remains of post holes (Figure 38), but their associations with other posts are not apparent. Table 21 summarizes these features. Features 21 and 38 may represent two large posts possibly related to the shop. Feature 21 was a large 1.8' diameter brown silt loam stain that was .8' deep and basin-shaped with wood fragments, suggesting a pier or wooden block of some type (Figure 38). Feature 38 was a larger 2.0' x 1.8' rectangular dark orange brown silt loam stain with charcoal flecks, and was 1.6' deep. Whether or not these features are related posts is not apparent from the archaeological data.

Feature 27, located in the extreme southwest corner of the excavation area, was a large shallow dark orange brown silt loam stain with rocks, glass and metals. The feature may represent a tree location due to its placement close to the road and ditch, and its proximity to Features 24, 25, and 28, all possible fence posts extending from the corner of the frame shed addition east of the shop wall.

ARTIFACT DISTRIBUTIONS AND ANALYSIS

Additional information about the wheelwright shop was provided by the artifact distribution data collected from Level 1 soils at the site. Maps of the densities and distributions of various classes of artifacts recovered from the excavation were computer generated and are presented as Figure 39 and 40.

TABLE 20

Summary of Walker House Porch Features

Feature Number	Unit	Dimensions	Description
18	S25 E5 S25 E10 S25 E0	22' long 1.0' - 2.0' wide depth variable	Stone rubble walkway. Cuts through Features 1 and 17. Extends to front door of 1900 house.
29	S40 E15	.8' long .8' wide 1.5' deep	Squarish-shaped post hole or mold. Very shallow. No artifacts recovered.
30	S15 E25	2.0' long 1.2' wide .4' deep	Brick and mortar pier. Roughly circular. Associated with 1900's house, and related to Feature 32. Nails and glass fragments recovered.
31	S35 E15	1.5' diameter .2' deep	Brick and stone pier. Associated with 1900's house, maybe related to Features 30, 32 and 37.
32	S15 35	2.2' long 1.0' wide 1.0' deep	Stone and mortar pier, associated with 1900's house, and related to Feature 30. Contained glass, porcelain insulator fragment, and whiteware and nails. Truncated by the edge of the excavation area.
33	S15 E30	1.5' diameter 1.7' deep	Post mold, but no post hole. No artifacts recovered.
37	S20 E20 S20 E25	4.0' long 2.0' wide 1.4' deep	Linear stone wall extending west from the corner of the porch. No artifacts recovered. May be related to an earlier porch for the 1900's house.

The distribution of window glass, brick, coal and scrap iron provide more data on the layout of the shop itself. The high densities of window glass (Figure 39) in the northeast and southeast corners of the rear foundation wall indicate the locations of windows in the shop. The amount of glass recovered from the units in the vicinity of the northeast corner may indicate that a rectangular window (rather than a square window) may have been located in this area.

High brick concentrations (shown by weight in Figure 39) were located along the south wall of the shop, or at least what presently survives of it. High densities of coal and slag (Figure 39) were also found in this vicinity, perhaps indicating the location of a hearth or work area within the shop. The presence of a window in this location, discussed above, lends further support to this conclusion, since a source of light would be needed to work indoors.

Wrought, cut, and wire nails were concentrated in three areas of the site (Figure 40). Cut nails occurred at the site in the greatest number, followed by wire and wrought nails. The largest concentration was associated with the wheelwright shop itself, and a second concentration was located in the vicinity of the shed addition. The third concentration was located along the northern edge of the

FIGURE 37

Profiles of Features 30, 33, and 37

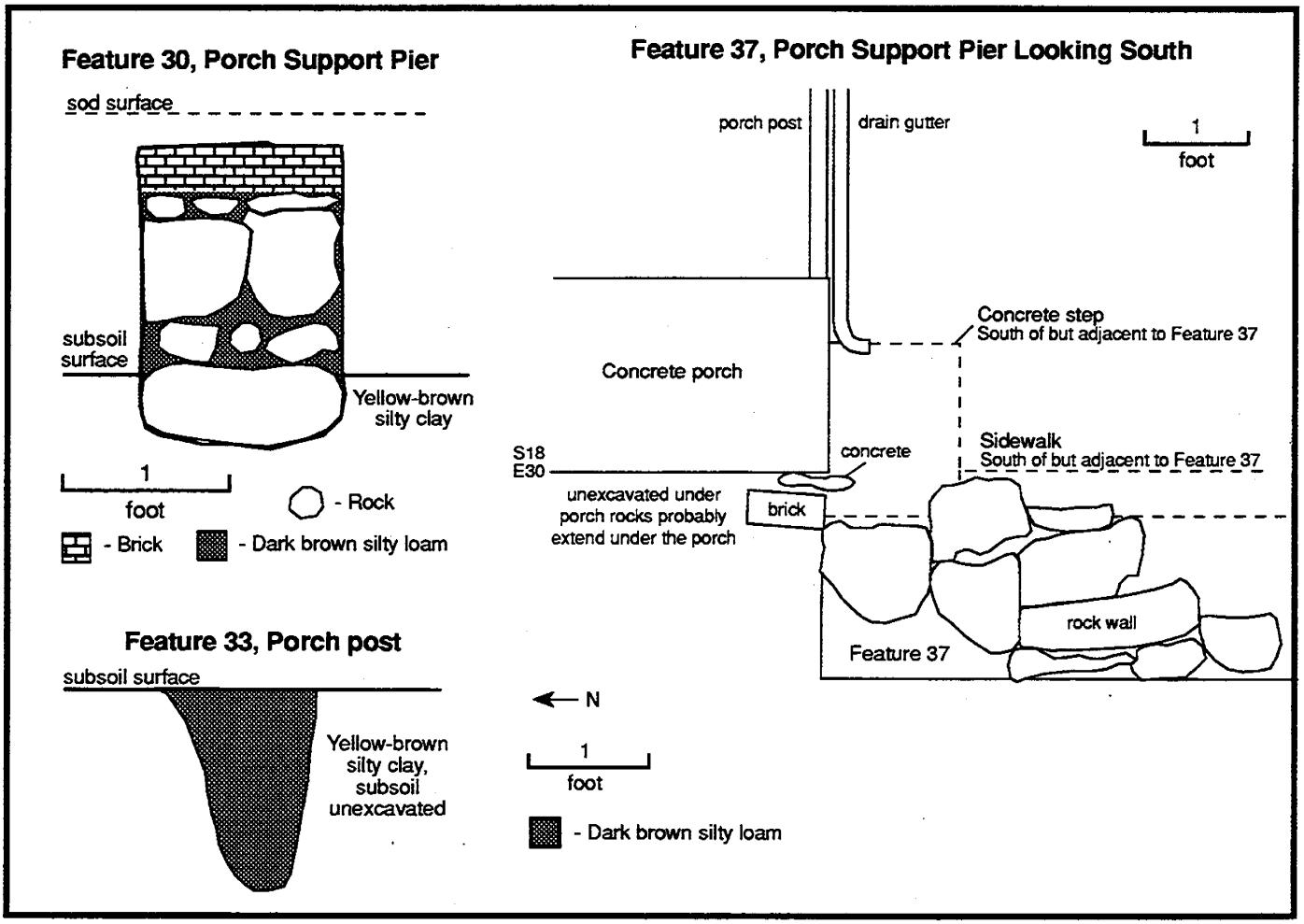


FIGURE 38

Profiles of Features 21, 35 and 36

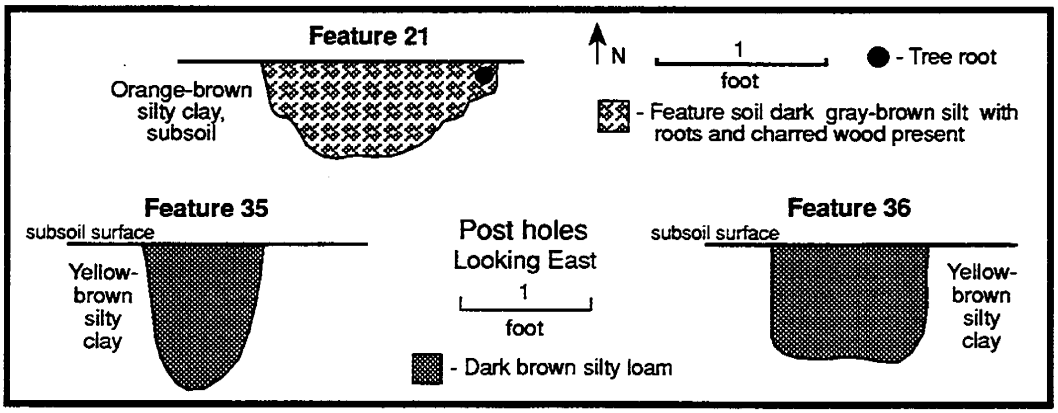


TABLE 21

Summary of Other Features

Feature Number	Unit	Dimensions	Description
21	S40 E10	1.8' diameter .8' deep	Medium brown silt loam circular stain. Charred wood and roots present. Window glass, nails, and metal fragments found.
24	S35 E5	1.1' diameter .65' deep	Square post mold. Bottom is also square. Dark brown silt loam. No artifacts.
25	S40 E5	1.0' diameter .35' deep	Shallow basin-shaped post mold. No artifacts. Dark brown silt loam.
26	S40 E0	8' long .5' wide' .8' deep	Oval, basin-shaped post mold. No artifacts. Brown silt loam.
27	S40 E0	2.0' long 4.8' wide .3' deep	Dark orange brown silt loam circular stain, with rocks, glass, and metal. Truncated by edge of excavation area.
28	S45 E0	1.2' diameter .3' deep	Dark orange brown silt loam stain, roughly circular, very shallow. No artifacts recovered. Possibly a post hole.
35	S10 E25	.8' long 1.0' wide 1.1' deep	Post mold. Dark silt loam circular stain. No artifacts recovered.
36	S10 E20	1.2' diameter .8' deep	Post mold. Dark silt loam circular stain. Considerable root disturbance. No artifacts recovered.
38	S20 E15	2.0' long 1.8' wide 1.6' deep	Rectangular dark orange brown silt loam stain with charcoal flecking. No artifacts recovered. Probably large post hole.

Walker House porch. All of these concentrations are indicative of initial construction of the shop, shed, and porch, and of subsequent repairs to the structures.

The distribution and density of ceramic fragments were not sufficiently great enough to warrant any clear conclusions about the site. In general, they were spread around unevenly with pockets associated with both the shop and Walker House (Figure 40). Bottle glass of all types (molded and blown) was concentrated in the southeast corner of the wheelwright shop, and in the vicinity of the shed addition. The presence of these glass bottles suggests that container glass may have been stored along the rear shop wall, or inside of the shed (Figure 40).

One hundred and two ceramic sherds were recovered from features at the site (Table 22). The majority of these sherds were redware (63.7%), whiteware, including embossed and blue transfer-printed (14.7%), American Bennington stoneware (10.7%), ironstone (4.9%), and smaller amounts of pearlware, yellowware, stoneware, and bone china. Only two ceramic vessels were recovered from the

FIGURE 39

Distribution of Window Glass, Brick, and Slag

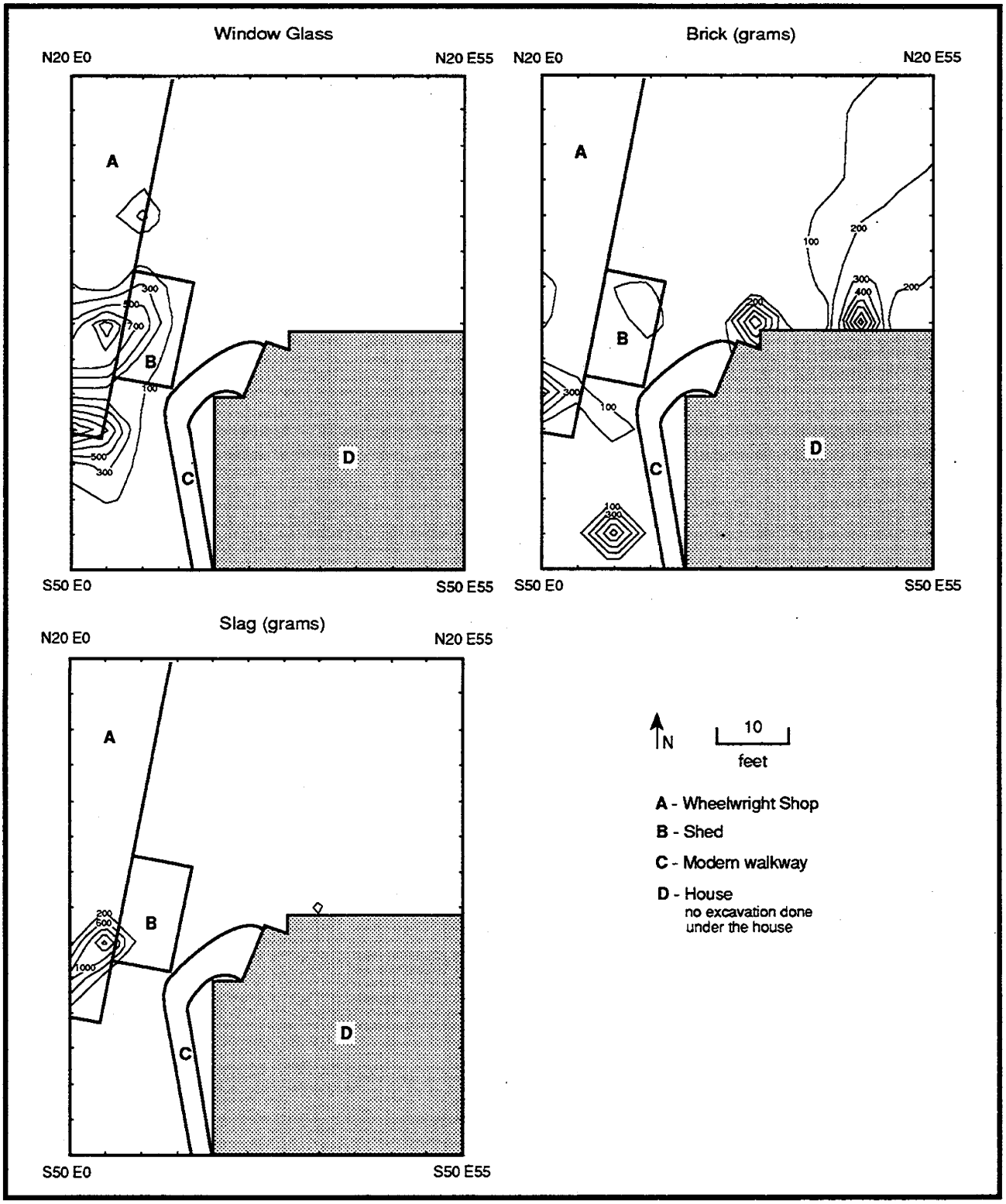
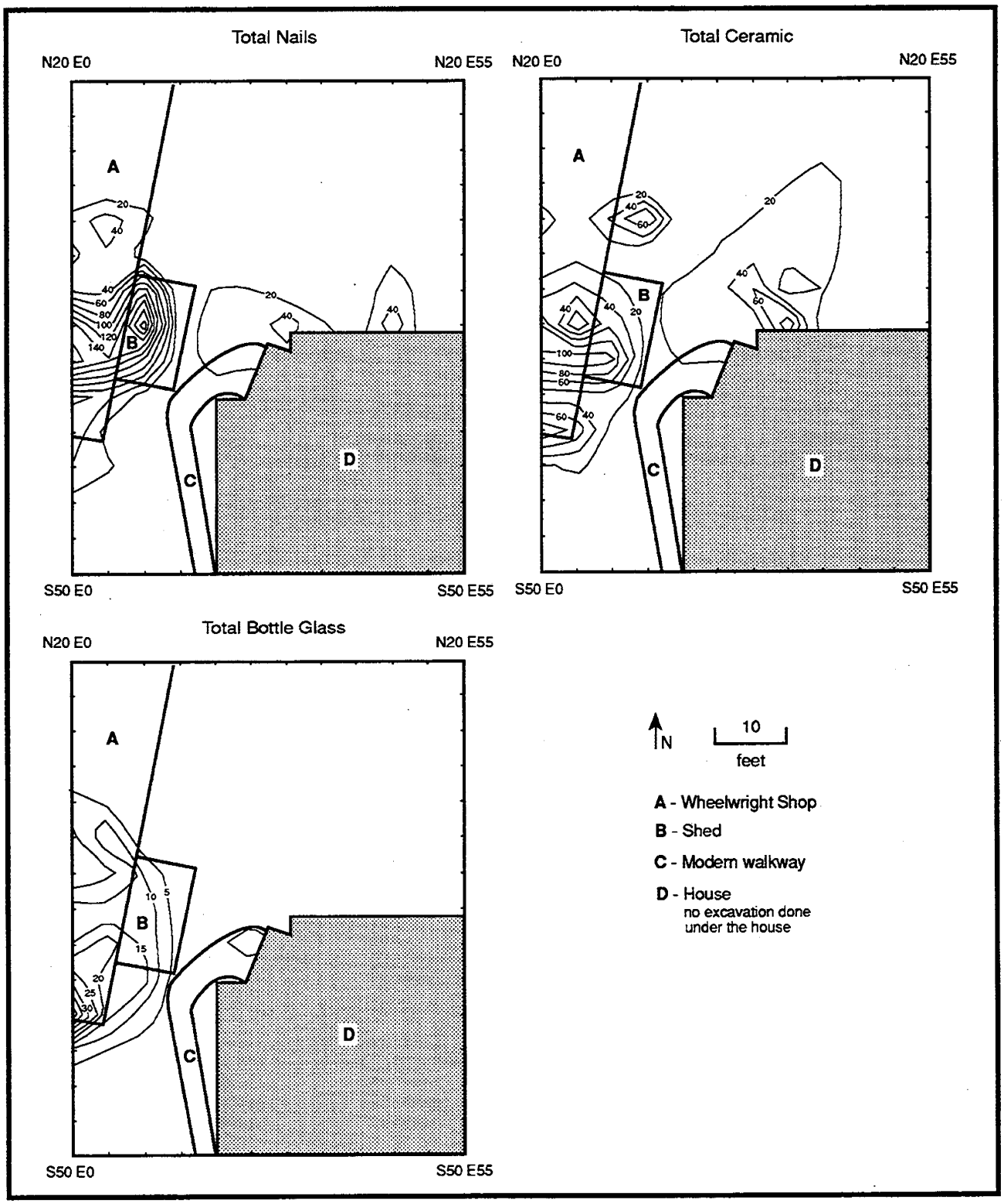


FIGURE 40

Distribution of Total Nails, Total Ceramic Sherds, and Total Bottle Glass



excavations at the Wheelwright Shop. One of these was a flint enameled spittoon with a hexagonal base and molded grape leaf design recovered from both plow zone and feature contexts. The other vessel was a molded floral pattern majolica large vase or punch bowl recovered only from plow zone units (Plate 39).

The faunal assemblage recovered from the Mermaid Wheelwright Shop site consisted of 204 osteological specimens. Of the total assemblage, 48 specimens were recovered from features, and the remaining 156 were recovered from test units and the plow zone. A 70 percent sample of the osteological material recovered from features was analyzed and is presented in Tables 23 and 24. As with the faunal materials from the Blacksmith Shop and Stable Site, the bone assemblage from the Wheelwright Shop is too small to provide definitive answers to questions of diet and subsistence. However, both sites do show an exclusive reliance on domestic species. The occurrence of small mammals and rodents at the sites suggests that the general condition of the yards at the shops was unkempt and dirty, an interpretation also supported by the artifact distribution and soil chemical data.

Very little identifiable metals associated with the operation of the wheelwright shop were found in the features. From Feature 1 (the rear wall of the shop) brass and copper rivets, hasps, brackets, hinges, iron sheeting, bolts, rings, and two file fragments, and a glaziers' point were recovered. The shop floor area (Feature 17) yielded considerably less material, and the metals recovered consisted mostly of small lumps and unidentifiable encrustations. In comparison to the blacksmith shop, the kinds of artifacts associated with the wheelwright shop were not apparent from the excavation.

The general scarcity of artifacts and features may be a characteristic of the interiors of wheelwright shops. Harrington's investigations of the Webb-Evans shops in Nauvoo, Illinois found few artifacts embedded in the floor of the wheelwright and wagon shop components of the building, in comparison to large amounts of coal, slag, and iron bits recovered in the adjacent blacksmith shop (1969:12,27). The number of interior features was also quite low at the Nauvoo Wheelwright Shop.

Unlike the Mermaid Blacksmith Shop, the wheelwright shop was probably a one-and-a-half story building. The western end of the Wilson-Slack Agricultural Works on the outskirts of Newark was a larger, two-story version of the more modest Mermaid Shop (Figure 41). Building size in this case was probably related to the range of jobs and number of clients serviced at each shop. In contrast

TABLE 22

Summary of Ceramic Types

Ceramic Types	Number of Sherds	Percent
American redware	45	63.7
American redware, unglazed	20	
Undecorated whiteware	12	14.7
Embossed whiteware	1	
Blue transfer- print whiteware	2	
American Bennington stoneware	11	10.7
American Blue and Gray stoneware	2	2.0
Ironstone	5	4.9
Bone china	2	2.0
Yellowware	1	1.0
Transfer-printed pearlware	1	1.0
Totals	**102**	**100.0%**

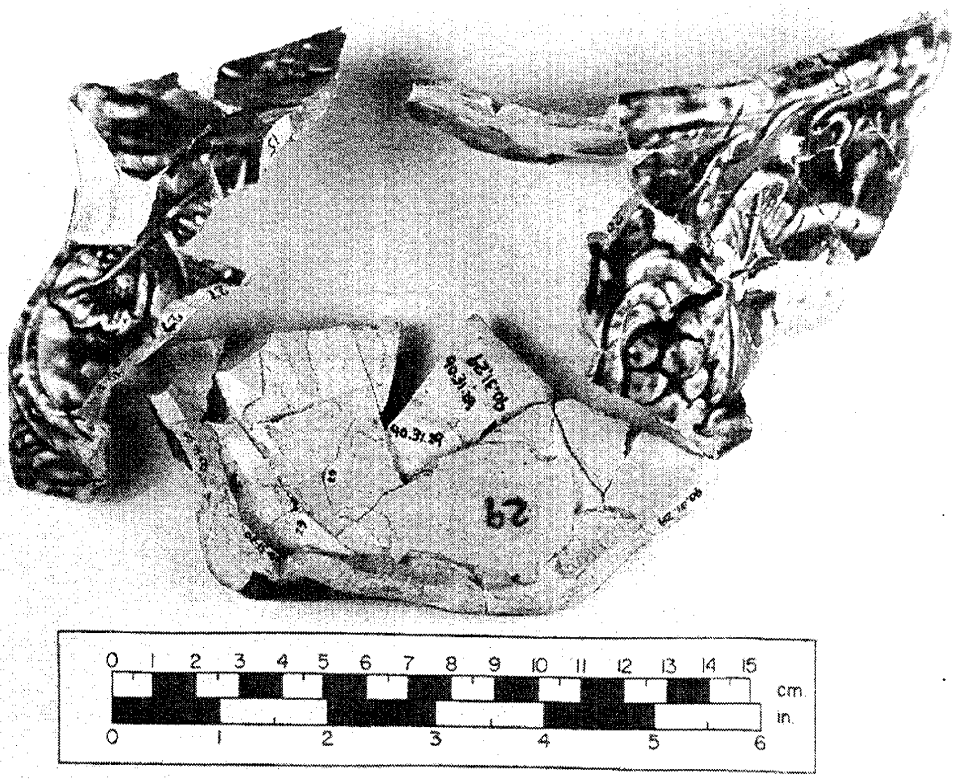
to blacksmith shops, research has shown that wheelwrights generally required more light for their jobs, so the building probably had more or larger windows than the blacksmith shop (Harrington 1969; Lasansky 1980).

SITE SUMMARY AND INTERPRETATIONS

Overall, the excavations at the Mermaid Wheelwright Shop site uncovered the remains of a modest shop with a shed addition attached. The rear wall of the shop was at least 42.5' long, and the location of the mortar and rubble stain suggests an interior partition; if the building was rectangular the gable ends would have been approximately 20 to 21' in length (Figure 42). The distribution of Level 1 artifacts suggests that the southern end of the structure was the location of the shop itself, while the northern end may have functioned as a storage area. The frame shed constructed on ground laid sills on the east side of the foundation, was probably a later addition to the shop, due to the presence of artifacts in the easternmost sill. Based on the types of artifacts distributed around the addition, the shed was used for storage and probably not as a work space. For the most part the wheelwright shop appears to have functioned primarily as a shop with much less indications of social interactions than were suggested by the artifacts and documentation for the blacksmith shop. The archaeology of the shop suggests that the documentary date range for the building (circa 1845 to 1900) is correct, and that no earlier structures occupied the property. The shop building was probably constructed between 1827 and 1849 by Samuel Walker, the first of the Walker family to own the Mermaid land. Probably the rise of the limestone

PLATE 39

Ceramic Vessels From the Mermaid Wheelwright Shop Site



Spitoon

Majolica Vessel

quarries in Mill Creek and Pike Creek valleys (Cooch 1936:41-46), and the need for repairing the heavy wagons used in hauling the limestone, served as the catalyst for the creation of a separate wheelwrighting establishment. The wheelwright shop was torn down in 1900. The archaeological remains of the wheelwright shop were badly damaged by house construction in 1900, pathway construction in the first half of the twentieth century, and road widening in 1964.

CONCLUSIONS AND RECOMMENDATIONS

The final archaeological investigations at the Mermaid Blacksmith Shop and Stable (7NC-D-106B) and Wheelwright Shop (7NC-D-106C) uncovered the remains of both of these structures, as well as associated sheds and features. Both sites had been badly damaged in 1964 when DelDOT widened Limestone Road, and most of the actual shop areas for both structures were demolished and destroyed. However, a surprisingly large number of features and a sizable collection of artifacts were recovered from the sites.

The excavations at the blacksmith shop site provided researchers with an opportunity to examine the material remains and documentary evidence of the rural blacksmithing trade in the Delaware Piedmont between circa 1730 and 1900. The management plan for Delaware's historic archaeological resources suggests that industrial shops can best be investigated using the Manufacture and Trade research domain. Included under this heading would be investigations of site location and use, shop layout, landscape and architectural alterations, the production process (including fuel, raw materials, and products), patterns of work behavior, and the domestic lives of the workers themselves (De Cunzo and Catts 1990:19-21).

Features related to the stable, the shop, a fuel shed, and a horseshoeing shed were discovered at the site, along with large amounts of scrap iron and slag. Evidence of some activity areas, particularly trash areas, were revealed by the plotting of plow zone artifact distributions and densities. The majority of the metal artifacts recovered were related to the shoeing shed, with smaller amounts of debris from horse furnishings, wagon parts, and scrap metal forming the balance of the assemblage.

Documentary investigations at the Mermaid intersection found that the history of the Mermaid Tavern and associated shops were an integral part of the history of the Ball, Derrickson, and Walker